

REMARKS

In section 2 of the Office Action, the Examiner rejected claims 38 and 48 under 35 U.S.C. §103(a) as being unpatentable over the Terk patent in view of the Shintani patent.

Independent claim 38 is directed to a system for automatically positioning an antenna comprising a motor and a controller. The motor can be coupled to the antenna, and the controller is coupled to the motor. The controller controls the motor in response to selection of a channel so as to automatically drive the antenna to a position at which the antenna is aimed at a source of a signal associated with the selected channel. The controller operates the motor to drive the antenna to the position based upon a location of the signal source and a location of the antenna. The controller receives the signal from the positioned antenna and processes the received signal so as to improve reception of the received signal. The processing of the received signal is dependent upon the position.

The Terk patent discloses a signal receiver 26 that provides a microprocessor 22 with the information content of a wireless channel selection signal 30. The

microprocessor 22 decodes the signal to identify the selected broadcast channel. The microprocessor 22 then sends signals to a motor driver 20 for rotating a motor 16 and an antenna 10 so that the antenna 10 assumes a predetermined optimal orientation for the selected broadcast channel. This predetermined optimal orientation is stored in a memory 46. A position encoder 34 provides a feedback signal to the microprocessor 22 so as to inform the microprocessor 22 of the actual orientation of antenna 10.

The Terk patent, however, describes no processing that improves the received signal from a positioned antenna and that is dependent on the position of the antenna as recited in independent claims 38 and 48. Therefore, the Examiner relies on the Shintani patent.

The Shintani patent discloses a DTV system 108 that includes a television receiver 109, an antenna 122, an antenna rotator 124, and an antenna position input device 132. As shown in Figure 4, the quality of reception of each channel at each incremental antenna position is determined according to automatic gain control (AGC) level information, equalizer tap coefficient information, bit error rate (BER) information, error correcting code information (such as

that associated with a Reed-Solomon error correction code), and carrier-to-noise (C/N) ratio information. The position of the antenna that produces the optimum reception quality is then stored in memory for each channel. Accordingly, when the user selects a desired channel, the corresponding antenna orientation signal is read from memory and is supplied to the antenna rotator 124. As a result, the antenna 122 is moved to the corresponding position.

As can be seen from the above description of the Terk patent and the Shintani patent, neither the Terk patent nor the Shintani patent discloses a controller that processes a received signal dependent upon antenna position so as to improve reception of the received signal.

The Terk patent merely controls position of an antenna based upon a selected channel. The Terk patent does not further disclose processing the received signal dependent on the position of the antenna so as to improve reception.

The Shintani patent positions the antenna based not on position of the signal source but rather upon various receiver functions such as automatic gain control, equalizer operation, bit error rate, error correction, and carrier-to-noise (C/N) ratio. As the

Examiner has realized in connection with the Terk patent, antenna positioning is not the processing of the received signal so as to improve its reception as recited in independent claim 38.

Also, although functions related to automatic gain control, equalization, bit error rate, error correction codes, and carrier-to-noise (C/N) ratio improve the received signal, these functions are not performed in dependence on antenna position. Indeed, the Shintani patent does not disclose anywhere that the processing of the received signal is dependent upon antenna position so as to improve reception of the received signal.

Accordingly, even if the Terk patent and the Shintani patent can be combined, the resulting combination cannot teach the invention of independent claim 38.

Because the combination of the Terk patent and the Shintani patent does not teach the invention of independent claim 38, independent claim 38 is patentable over the Terk patent in view of the Shintani patent.

Because independent claim 38 is patentable over the Terk patent in view of the Shintani patent, dependent claims 39-47, 58, and 59 are likewise patentable over the Terk patent in view of the Shintani patent.

Independent claim 48 similarly recites the processing of the received signal dependent upon antenna position so as to improve reception of the received signal.

As discussed above, neither the Terk patent nor the Shintani patent discloses the processing of a received signal dependent upon antenna position so as to improve reception of the received signal. Accordingly, even if the Terk patent and the Shintani patent can be combined, the resulting combination cannot teach the invention of independent claim 48.

Because the combination of the Terk patent and the Shintani patent does not teach the invention of independent claim 48, independent claim 48 is patentable over the Terk patent in view of the Shintani patent.

Because independent claim 48 is patentable over the Terk patent in view of the Shintani patent, dependent claims 49-57, 60, and 61 are likewise patentable over the Terk patent in view of the Shintani patent.

In section 3 of the Office Action, the Examiner rejected dependent claims 39-41 and 49-51 over the Terk patent in view of the Shintani patent and further in view of the Ma patent.

The Ma patent discloses a satellite antenna system that drives an antenna until an optimal

orientation of the antenna with respect to a signal source is detected. The optimal orientation for the antenna with respect to the signal source is defined as the orientation that has the lowest noise with respect to the signal source. This orientation is stored. There is no disclosure or suggestion in the Ma patent of any processing of the received signal to improve its reception based on the position of the antenna.

Because the Terk patent, the Shintani patent, and the Ma patent do not disclose the processing of a received signal dependent upon antenna position so as to improve reception of the received signal, the combination of the Terk patent, the Shintani patent, and the Ma patent cannot be combined to meet the limitations of independent claims 38 and 48.

Because independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Ma patent, dependent claims 39-41 and 49-51 are likewise patentable over the Terk patent in view of the Shintani patent and further in view of the Ma patent.

Moreover, the Examiner argues, with respect to dependent claims 39-41 and 49-51, that the disclosure in the Ma patent of using a noise figure in the presetting of the antenna positions suggests the storing of the

location of a known offending source. However, the Ma patent does not suggest that the noise figure is dependent on the location of an offending source. Indeed, the Ma patent merely suggests the noise figure is related to antenna position. Therefore, because the Ma patent does not suggest that the noise figure is dependent on the location of an offending source, the Ma cannot suggest the storing of the location of an offending source.

Therefore, for this reason also, dependent claims 39-41 and 49-51 are patentable over the Terk patent in view of the Shintani patent and further in view of the Ma patent.

In section 4 of the Office Action, the Examiner rejected dependent claims 42, 45, 52, and 55 over the Terk patent in view of the Shintani patent and further in view of the Holmes patent.

The Holmes patent is directed to ghost cancellation. A variable gain amplifier 80 is part of a circuit that generates a pseudo ghost. This pseudo ghost is used to cancel the real ghost. While this ghost canceling function is meant to improve the signal, there is no suggestion that this function is dependent on the position of an antenna. Therefore, there is no suggestion in the Holmes patent of the processing of the

received signal dependent upon antenna position so as to improve reception of the received signal.

Accordingly, because there is no disclosure or suggestion in the Terk patent, the Shintani patent, and the Holmes patent to process a received signal dependent on antenna position so as to improve reception of the received signal, the inventions of independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Holmes patent.

Because independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Holmes patent, dependent claims 42, 45, 52, and 55 are likewise patentable over the Terk patent in view of the Shintani patent and further in view of the Holmes patent.

Moreover, dependent claims 42 and 52 recite the processing of a received signal by controlling the gain of the variable gain amplifier according to the location of the signal source so as to improve reception of the received signal. The variable gain amplifier 80 disclosed in the Holmes patent is used to generate the pseudo ghost which, in turn, is used to cancel the real ghost. There is no suggestion that the operation of the variable gain amplifier 80 is dependent on the position of an antenna.



Therefore, for this reason also, dependent claims 42 and 52 are patentable over the Terk patent in view of the Shintani patent and further in view of the Holmes patent.

Dependent claims 45 and 55 recite that canceling of ghosts is dependent upon the position of the antenna. The Holmes patent discloses canceling ghosts, but not disclose the canceling of ghosts dependent on the position of an antenna.

Therefore, for this reason also, dependent claims 45 and 55 are patentable over the Terk patent in view of the Shintani patent and further in view of the Holmes patent.

In section 5 of the Office Action, the Examiner rejected dependent claims 43, 47, 53, and 57 over the Terk patent in view of the Shintani patent and further in view of the Babitch patent.

The Babitch patent discloses a system for automatically pointing a highly directional antenna. Two GPS antennas are mounted at horizontally opposed ends of the highly directional antenna so that the GPS antennas lie on a line having a normal vector parallel to a boresight of the highly directional antenna. The outputs from the GPS antennas are used to calculate the GPS latitude and longitude and the attitude angles of the

pair of GPS antennas. The highly directional antenna is pointed at a particular target communications satellite based on these calculations.

As can be seen, there is no disclosure or suggestion in the Babitch patent of processing a received signal from a positioned antenna to improve the received signal, where the processing is dependent upon the position of the antenna.

Accordingly, because there is no disclosure or suggestion in the Terk patent, the Shintani patent, and the Babitch patent to process a received signal dependent on the position of an antenna so as to improve reception of the received signal, the inventions of independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Babitch patent.

Because independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Babitch patent, dependent claims 43, 47, 53, and 57 are likewise patentable over the Terk patent in view of the Shintani patent and further in view of the Babitch patent.

In section 6 of the Office Action, the Examiner rejected dependent claims 44 and 54 over the Terk patent

in view of the Shintani patent and further in view of the McNabb patent.

The McNabb patent discloses a system for automatically pointing an antenna that is carried on a mobile platform toward a distant location such as a terrestrial, airborne, or satellite transmitter or receiver. The system includes a database for storing data for distant locations, an electronic compass for determining a reference azimuth for the local antenna, and a global positioning system (GPS) receiver for determining a local location. A processor computes a pointing direction having an azimuth and an elevation from the local location of the mobile platform to the distant location. The processor also computes a horizontal rotation angle between the pointing direction and the reference azimuth and a vertical rotation angle from local horizontal to the desired elevation. The local antenna is rotated by the horizontal and vertical rotation angles in order to point the local antenna to the distant location.

There is no disclosure or suggestion in the McNabb patent of processing a received signal dependent upon the position of the antenna so as to improve the received signal. Accordingly, because there is no disclosure or suggestion in the Terk patent, the Shintani

patent, and the McNabb patent of processing a received signal dependent on antenna position so as to improve reception of the received signal, the inventions of independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the McNabb patent.

Because independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the McNabb patent, dependent claims 44 and 54 are likewise patentable over the Terk patent in view of the Shintani patent and further in view of the McNabb patent.

In section 7 of the Office Action, the Examiner rejected dependent claims 46 and 56 over the Terk patent in view of the Shintani patent and further in view of the Juroff patent.

The Juroff patent discloses a system for remotely tuning a television tuner. A remote transmitter 26 transmits a signal to the system, which responds to the signal by driving a motor to tune the television tuner to the desired station.

There is no disclosure or suggestion in the Juroff patent of processing a received signal dependent upon antenna position so as to improve the received signal. Accordingly, because there is no disclosure or

suggestion in the Terk patent, the Shintani patent, and the Juroff patent of processing a received signal dependent on antenna position so as to improve reception of the received signal, the inventions of independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Juroff patent.

Because independent claims 38 and 48 are patentable over the Terk patent in view of the Shintani patent and further in view of the Juroff patent, dependent claims 46 and 56 are likewise patentable over the Terk patent in view of the Shintani patent and further in view of the Juroff patent.

CONCLUSION

In view of the above, it is clear that the claims of the present application patentably distinguish over the art applied by the Examiner. Accordingly, allowance of these claims and issuance of the above captioned patent application are respectfully requested.

Respectfully submitted,

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